

PATENT  
Attorney Docket No. UM-07718

*Handwritten initials: HWB*

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Madhavi Krishnan *et al.*

Serial No.: 10/678,805

Group No.: 1637

Filed: 10/03/03

Examiner: Wilder, C.

Entitled: **Methods of Performing Biochemical Reactions in a Convective Flow Field**

**INFORMATION DISCLOSURE  
STATEMENT TRANSMITTAL**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

<b>CERTIFICATE OF MAILING UNDER 37 C.F.R. § 1.8(a)(1)(i)(A)</b>	
I hereby certify that this correspondence (along with any referred to as being attached or enclosed) is, on the date shown below, being deposited with the U.S. Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.	
Dated: <u>October 7, 2005</u>	By: <u><i>Christopher J. Collins</i></u> Christopher J. Collins

Sir or Madam:

Enclosed please find an Information Disclosure Statement and Form PTO-1449, including copies of the references contained thereon, for filing in the U.S. Patent and Trademark Office.

A check for \$180.00 is also enclosed pursuant to 37 C.F.R. § 1.17(p) for filing this Information Disclosure Statement after three months as set forth in 37 C.F.R. § 1.97(c).

The Commissioner is hereby authorized to charge any additional fee or credit overpayment to our Deposit Account No. 08-1290. **An originally executed duplicate of this transmittal is enclosed for this purpose.**

Dated: October 7, 2005

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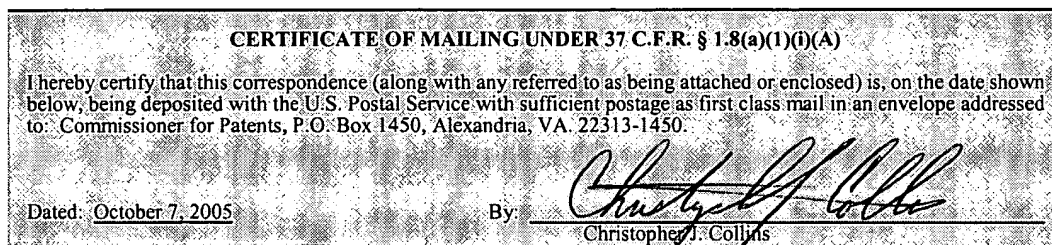


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INFORMATION DISCLOSURE STATEMENT

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Sir or Madam:

The citations listed below, copies attached, may be material to the examination of the above-identified application, and are therefore submitted in compliance with the duty of disclosure defined in 37 C.F.R. §§ 1.56 and 1.97. The Examiner is requested to make these citations of official record in this application.

The following printed publications are referred to in the body of the specification:

- U.S. Patent No. 4,608,222 to Brueckner;
- U.S. Patent No. 4,683,195 to Mullis *et al.*;
- U.S. Patent No. 4,683,202 to Mullis *et al.*;
- U.S. Patent No. 4,965,188 to Mullis *et al.*;
- U.S. Patent No. 5,091,328 to Miller;
- U.S. Patent No. 5,626,764 to Burns *et al.*;
- U.S. Patent No. 6,048,734 to Burns *et al.*;
- U.S. Patent No. 6,057,149 to Burns *et al.*;
- U.S. Patent No. 6,130,098 to Burns *et al.*;
- U.S. Patent No. 6,271,021 to Burns *et al.*;
- U.S. Patent No. 6,379,929 to Burns *et al.*;
- U.S. Patent No. 6,515,857 to Ford *et al.*;

- Adamson, A. W., Physical Chemistry of Surfaces, 5th ed., Wiley, NY, NY, 395-399 (1990);
- Anderson and Young, Quantitative Filter Hybridization, in *Nucleic Acid Hybridization* [1985]<sup>1</sup>;
- Chamberlain *et al.*, "New RNA Polymerase from *Escherichia coli* infected with Bacteriophage T7," *Nature*, 228:227-231 (1970);
- Chandrasekhar, S., *Hydrodynamic and Hydromagnetic Stability* Claredon, Oxford, 1961<sup>2</sup>;
- Doty *et al.*, "Strand Separation and Specific Recombination in Deoxyribonucleic Acids:Physical Chemical Studies", *Proc.Nat.Acad.Sci., U.S.A.* 46:461-477 (1960);
- H.A. Erlich (ed.), *PCR Technology*, Stockton Press [1989]<sup>3</sup>;
- Hayashi *et al.*, "Restriction of in Vivo Genetic Transcription to one of the Complementary Strands of DNA", *B Proc.Nat.Acad.Sci., U.S.A.* 50: 664-671 (1963);
- Innis *et al.*, "DNA sequencing with *Thermus aquaticus* DNA polymerase and direct sequencing of polymerase chain reaction-amplified DNA", *Proc. Natl. Acad. Sci. USA* 85:9436-9440 (1988);
- Kacian *et al.*, "A Replicating RNA Molecule Suitable for a Detailed Analysis of Extracellular Evolution and Replication," *Proc. Natl. Acad. Sci. USA*, 69:3038-3042 (1972);
- Kim, E. and Whitesides, G.M., "Imbibition and Flow of Wetting Liquids in Noncircular Capillaries," *J. Phys. Chem. B.*, 101:855-863 (1997);
- Kleppe K, *et al.*, "Studies on polynucleotides. XCVI. Repair replications of short synthetic DNA's as catalyzed by DNA polymerases." *J Mol Biol* 56:341-61 (1971);
- Lindahl, T., and B. Nyberg, "Rate of Depurination of Native Deoxyribonucleic Acid," *Biochemistry* 11:3610-3618 (1972);
- Maniatis, *et al.*, "Regulation of Inducible and Tissue-Specific Gene Expression," *Science* 236:1237-1245 (1987);

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<sup>1</sup> This reference is a text book explaining general techniques and procedures, without regard to any specific pages, therefore a copy is not supplied. If the examiner request a specific section from this reference, we will seek to obtain a copy.

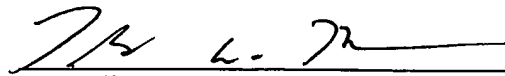
<sup>2</sup> This reference is a text book explaining general techniques and procedures, without regard to any specific pages, therefore a copy is not supplied. If the examiner request a specific section from this reference, we will seek to obtain a copy.

<sup>3</sup> This reference is a text book explaining general techniques and procedures, without regard to any specific pages, therefore a copy is not supplied. If the examiner request a specific section from this reference, we will seek to obtain a copy.

- Marmur and Lane, "Strand Separation and Specific Recombination in Deoxyribonucleic Acids: Biological Studies", *Proc. Nat. Acad. Sci., U.S.A.* 46:453-461 (1960);
- Muller, G., *et al.*, "Natural Convection in Vertical Bridgman Configurations," *J. Cryst. Growth* 70:78-93 (1984);
- Pearson and Lipman, "Improved tools for biological Sequence comparison," *Proc. Natl. Acad. Sci. (USA)* 85:2444-2448 (1988);
- Sambrook, J. *et al.*, *Molecular Cloning, A Laboratory Manual*, 2d Ed. Cold Spring Harbor Laboratory Press, New York, 13.7-13.9;
- Smith and Waterman, "Comparison of Biosequences," *Adv. Appl. Math.* 2:482-489 (1981);
- Southern, "Detection of Specific Sequences Among DNA Fragments Separated by Gel Electrophoresis", *J. Mol. Biol.* 98:503-517 (1975);
- Voss, *et al.*, "The role of enhancers in the regulation of cell-type-specific transcriptional control," *Trends Biochem. Sci.*, 11:287-289 (1986);
- Wu and Wallace, "The Ligation Amplification Reaction (LAR)-Amplification of Specific DNA Sequences Using Sequential Rounds of Template-Dependent Ligation," *Genomics*, 4:560-569 (1989); and
- Zhang, P., *et al.*, "Patterns in spherical Rayleigh-Benard convection: a giant spiral roll and its dislocations" *Phys Rev E Stat Nonlin Soft Matter Phys* 66(5 Pt 2):055203 (2002).

This Information Disclosure Statement under 37 C.F.R. §§ 1.56 and 1.97 is not to be construed as a representation that a search has been made, that additional information material to the examination of this application does not exist, or that any one or more of these citations constitutes prior art.

Dated: October 7, 2005

  
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FORM PTO-1449  
(Modified)U.S. Department of Commerce  
Patent and Trademark Office

Attorney Docket No.: UM-07718

Serial No.: 10/678,805

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use Several Sheets if Necessary)

(37 CFR § 1.98(b))

Applicant: Krishman *et al.*

Filing Date: 10/03/03

Group Art Unit: 1637

## U.S. PATENT DOCUMENTS

Examiner Initials	Cite No.	Serial / Patent Number	Issue Date	Applicant / Patentee	Class	Subclass	Filing Date
	1.	4,608,222	8/26/86	Brueckner	376	104	7/10/73
	2.	4,683,195	07/28/87	Mullis <i>et al.</i>	435	6	02/07/86
	3.	4,683,202	07/28/87	Mullis <i>et al.</i>	435	91	10/25/85
	4.	4,965,188	10/23/90	Mullis <i>et al.</i>	435	6	6/17/87
	5.	5,091,328	2/25/92	Miller	437	52	11/21/89
	6.	5,626,764	5/6/97	Burns <i>et al.</i>	210	661	12/14/94
	7.	6,048,734	4/11/00	Burns <i>et al.</i>	436	180	7/3/97
	8.	6,057,149	5/2/00	Burns <i>et al.</i>	435	287.2	9/15/95
	9.	6,130,098	10/10/00	Burns <i>et al.</i>	436	180	9/26/97
	10.	6,271,021	8/7/01	Burns <i>et al.</i>	435	287.2	3/18/99
	11.	6,379,929	4/30/02	Burns <i>et al.</i>	435	91.2	11/19/97
	12.	6,515,857	2/4/03	Ford <i>et al.</i>	361	687	5/15/01

## FOREIGN PATENTS OR PUBLISHED FOREIGN PATENT APPLICATIONS

	Document Number	Publication Date	Country / Patent Office	Class	Subclass	Translation	
						Yes	No
	13.						

## OTHER DOCUMENTS (Including Author, Title, Date, Relevant Pages, Place of Publication)

	14.	Adamson, A. W., <u>Physical Chemistry of Surfaces</u> , 5th ed., Wiley, NY, NY, 395-399 (1990)
	15.	Chamberlain <i>et al.</i> , "New RNA Polymerase from <i>Escherichia coli</i> infected with Bacteriophage T7," <i>Nature</i> , 228:227-231 (1970)
	16.	Doty <i>et al.</i> , "Strand Separation and Specific Recombination in Deoxyribonucleic Acids: Physical Chemical Studies", <i>Proc. Nat. Acad. Sci., U.S.A.</i> 46:461-477 (1960)
	17.	Hayashi <i>et al.</i> , "Restriction of in Vivo Genetic Transcription to one of the Complementary Strands of DNA", <i>Proc. Nat. Acad. Sci., U.S.A.</i> 50: 664-671 (1963)
	18.	Innis <i>et al.</i> , "DNA sequencing with <i>Thermus aquaticus</i> DNA polymerase and direct sequencing of polymerase chain reaction-amplified DNA", <i>Proc. Natl. Acad. Sci. USA</i> 85:9436-9440 (1988)
	19.	Kacian <i>et al.</i> , "A Replicating RNA Molecule Suitable for a Detailed Analysis of Extracellular Evolution and Replication," <i>Proc. Natl. Acad. Sci. USA</i> , 69:3038-3042 (1972)
	20.	Kim, E. and Whitesides, G.M., "Imbibition and Flow of Wetting Liquids in Noncircular Capillaries," <i>J. Phys. Chem. B.</i> , 101:855-863 (1997)
	21.	Kleppe K, <i>et al.</i> , "Studies on polynucleotides. XCVI. Repair replications of short synthetic DNA's as catalyzed by DNA polymerases." <i>J Mol Biol</i> 56:341-61 (1971)
	22.	Lindahl, T., and B. Nyberg, "Rate of Depurination of Native Deoxyribonucleic Acid," <i>Biochemistry</i> 11:3610-3618 (1972)
	23.	Maniatis, <i>et al.</i> , "Regulation of Inducible and Tissue-Specific Gene Expression," <i>Science</i> 236:1237-1245 (1987)
	24.	Marmur and Lane, "Strand Separation and Specific Recombination in Deoxyribonucleic Acids: Biological Studies", <i>Proc. Nat. Acad. Sci., U.S.A.</i> 46:453-461 (1960)
	25.	Muller, G., <i>et al.</i> , "Natural Convection in Vertical Bridgman Configurations," <i>J. Cryst. Growth</i> 70:78-93 (1984)

Examiner:

Date Considered:

EXAMINER:

Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449 (Modified)	U.S. Department of Commerce Patent and Trademark Office	Attorney Docket No.: UM-07718	Serial No.: 10/678,805
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> (Use Several Sheets If Necessary)		Applicant: Krishnan <i>et al.</i>	
(37 CFR § 1.98(b))		Filing Date: 10/03/03	Group Art Unit: 1637
OTHER DOCUMENTS (Including Author, Title, Date, Relevant Pages, Place of Publication)			
26.	Pearson and Lipman, "Improved tools for biological sequence comparison," <i>Proc. Natl. Acad. Sci. (U.S.A.)</i> 85:2444-2448 (1988)		
27.	Sambrook, J. <i>et al.</i> , Molecular Cloning, A Laboratory Manual, 2d Ed. Cold Spring Harbor Laboratory Press, New York, 13.7-13.9		
28.	Smith and Waterman, "Comparison of Biosequences," <i>Adv. Appl. Math.</i> 2:482-489 (1981)		
29.	Smith and Wilcox, "A Restriction Enzyme from <i>Hemophilus influenzae</i> ," <i>J. Mol. Biol.</i> 51:379-391 (1970)		
30.	Southern, "Detection of Specific Sequences Among DNA Fragments Separated by Gel Electrophoresis", <i>J. Mol. Biol.</i> 98:503-517 (1975)		
31.	Voss, <i>et al.</i> , "The role of enhancers in the regulation of cell-type-specific transcriptional control," <i>Trends Biochem. Sci.</i> , 11:287-289 (1986)		
32.	Wu and Wallace, "The Ligation Amplification Reaction (LAR)-Amplification of Specific DNA Sequences Using Sequential Rounds of Template-Dependent Ligation," <i>Genomics</i> , 4:560-569 (1989)		
33.	Zhang, P., <i>et al.</i> , "Patterns in spherical Rayleigh-Benard convection: a giant spiral roll and its dislocations" <i>Phys Rev E Stat Nonlin Soft Matter Phys</i> 66(5 Pt 2):055203 (2002)		
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<b>EXAMINER:</b> Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			